WHAT IS CLAIMED IS:

1. A method for achieving an averaged result on packed binary values for use in finite impulse response filter computations, the method using an averaging instruction that computes an average on first and second sets of packed values to produce a resulting set of packed averages, the method comprising

successively applying the averaging instruction to packed values to produce a result, *D*, that is an approximate desired result;

adjusting *D* to be in a predetermined relation to a desired exact result; and

using *D* in a finite impulse response operation.

2. The method of claim 1, wherein the predetermined relation to a desired exact result includes ensuring that *D* is no more than the desired exact result.

3. The method of claim 1, wherein the predetermined relation to a desired exact result includes ensuring that *D* is no less than the desired exact result.

4. The method of claim 1, wherein the predetermined relation to a desired exact result includes ensuring that *D* is within a predetermined threshold of the desired exact result.

5. The method of claim 1, wherein the step of adjusting *D* includes a substep of adding a constant value to *D*.

6. The method of claim 5, wherein the constant value includes 1.

7. The method of claim 6, wherein the substep of adding the constant value to *D* further comprises

using a saturated add.

8. The method of claim 7, further comprising

determining a correct least significant bits of a desired exact result.

9. The method of claim 7, further comprising

determining an error amount for *D*; and

adjusting *D* in accordance with the error amount.

10. The method of claim 1, wherein the step of adjusting *D* includes a substep of

subtracting a constant value from *D*.

11. The method of claim 10, wherein the constant value includes 2.

12. The method of claim 10 wherein the substep of subtracting the constant value from *D* further comprises

using a saturated subtract.

13. The method of claim 10, further comprising

determining a correct least significant bits of a desired exact result.

14. The method of claim 10, further comprising

determining an error amount for *D*; and

adjusting *D* in accordance with the error amount.

15. The method of claim 1, wherein the averaging instruction includes a *PAVG* instruction.

16. The method of claim 15, further comprising

detecting when a *PAVG* operation would be applied to two same operands and, if so performing the step of omitting application of the *PAVG* operation and using one of the same operands values as the result of the *PAVG* operation.

17. The method of claim 1, wherein *D* is adjusted to be an exact desired result.

18. A method for using a single-instruction multiple-data (SIMD) instruction to perform a function, wherein the SIMD instruction uses M arguments, wherein the function uses N variables, wherein M and N are not the same, the method comprising

using the SIMD instruction on a plurality of packed values to obtain an approximate packed value result;

adjusting the approximate packed value result to obtain an adjusted packed value result, wherein the adjusted packed value result is in a predetermined relation to a desired exact result; and

using the adjusted packed value result in an FIR calculation.

19. The method of claim 18, wherein the SIMD instruction includes an averaging operation

20. The method of claim 19, wherein the step of using the SIMD instruction includes

using a *PAVG* instruction.

21. The method of claim 18, wherein the predetermined relation to a desired exact result includes ensuring that the adjusted packed value result is no more than the desired exact result.

22. The method of claim 18, wherein the predetermined relation to a desired exact result includes ensuring that the adjusted packed value result is no less than the desired exact result.

23. The method of claim 18, wherein the predetermined relation to a desired exact result includes ensuring that the adjusted packed value result is within a predetermined threshold of the desired exact result.

24. The method of claim 18, wherein the predetermined relation to a desired exact result includes adjusting the adjusted packed value result to be closer to the desired exact result.

25. The method of claim 18, wherein the step of adjusting the approximate packed value result includes a substep of

adding the value 1 to the approximate packed value result.

26. The method of claim 25, wherein the substep of adding the value 1 further comprises

using a saturated add.

27. The method of claim 18, wherein the step of adjusting the approximate packed value result includes a substep of

subtracting the value 2 from the approximate packed value result.

28. The method of claim 18, further comprising

determining a correct least significant bits of a desired exact result.

29. The method of claim 18, further comprising

determining an error amount for the approximate packed value result; and

adjusting the approximate packed value result in accordance with the error amount.

30. The method of claim 20, further comprising

detecting when a *PAVG* operation would be applied to two same operands and, if so performing the step of omitting application of the *PAVG* operation and using one of the same operands values as the result of the *PAVG* operation.

31. A computer-readable medium including instructions for using a single-instruction multiple-data (SIMD) instruction to perform a function, wherein the SIMD

instruction uses M arguments, wherein the function uses N variables, wherein M and N are not the same, the computer-readable medium comprising

one or more instructions for using the SIMD instruction on a plurality of packed values to obtain an approximate packed value result;

one or more instructions for adjusting the approximate packed value result to obtain an adjusted packed value result, wherein the adjusted packed value result is in a predetermined relation to a desired exact result; and

one or more instructions for using the adjusted packed value result in an FIR calculation.

32. An apparatus for using a single-instruction multiple-data (SIMD) instruction to perform a function, wherein the SIMD instruction uses M arguments, wherein the function uses N variables, wherein M and N are not the same, the apparatus comprising

a processor coupled to a storage device;

one or more instructions stored in the storage device for using the SIMD instruction on a plurality of packed values to obtain an approximate packed value result;

one or more instructions stored in the storage device for adjusting the approximate packed value result to obtain an adjusted packed value result, wherein the adjusted packed value result is in a predetermined relation to a desired exact result; and

one or more instructions stored in the storage device for using the adjusted packed value result in an FIR calculation.